EMS PATHFINDER RESOURCE CHECKLIST

EMS Element	Source	Guidance	Tools	Forms	Examples of Completed Forms/Tools or Case Studies
Obtaining Management Commitment and Other Groundwork	Integrated EMS	< **Overview+** < **Major steps+** < **DfE program +** < **Building support+** < **Assigning responsibility+**	< **Building support questionnaire+** < **Cost-benefit worksheet+** < **Responsibilities worksheet+** < **Schedule & resources worksheet+** < **Glossary+**		
	SME Guide	< **EMS benefits+** < **Keys to success+** < **Major steps+** < **Road map for EMS development++** < **Integration of EMS and QMS+**	< **Frequently asked questions+** < **Cost benefit table+** < **EMS-QMS common elements+** < **Using consultants considerations+** < **Planning steps flow chart+** < **Key EMS elements snapshot+** < **Step-by-step EMS development flow chart+** < **ISO 9001 and 14001 linkages+** < **Additional sources of assistance++**		**EMS benefits to a service organization+**
	CEMP	< Overview < Basic EMS elements presentation < **Gap analysis discussion+** < Management commitment < Systems integration	**Self-Assessment Matrix+**		
	EMR	< Benefits of an EMR < Correlation between EMR disciplines, the CEMP Principles, and Sections of ISO 14001 < Gap Analysis through questionnaire	Federal Facility Pre-Site Questionnaire		EMR Case Studies

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EMS PATHFINDER RESOURCE CHECKLIST (Continued)

EMS Element	Source	Guidance	Tools	Forms	Examples of Completed Forms/Tools or Case Studies
	Municipalities	< Gap Analysis < Key characteristics of an EMS < Four-phased EMS implementation program < **EMS benefits+** < **What is an EMS+** < **Keys to success+** < EPA and local govt objectives for the EMS Pilot Program < Top management involvement	< **Cost Analysis+** < **Direct Internal Labor Costs Chart+** < **EMS framework diagram+**		
	CEC Guidance	< Purpose of an EMS < Choosing a model			
Environmental Policy	Integrated EMS	< **Refining issues** < **Setting boundaries** < **Sample commitments**	**Policy creation questionnaire+**		**Provides two policy examples**
	SME Guide	< Role of top management < ISO 14001 commitments	**Environmental Policy worksheet**		< **Provides 3 policy examples** < **Example of how to identify stakeholder concerns**
	CEMP	Steps to address policy development			**Sample commitments**
	EMR	Addressed in questionnaire			
	Municipalities	Mentioned in Phase I: Developing Project Infrastructure	**List of most common ways of communicating the environmental policy**		**Examples of environmental policies (Appendix C)**
	CEC Guidance	Documented, communicated policy			
Identifying Environmental Aspects	Integrated EMS	**How to conduct aspect identification, significance determination, and helpful sources of information****	< **Significance determination criteria questionnaire**** < **Chemical exposure worksheets**** < **Community issue worksheets**** < **Natural resource use worksheet**** < **Sample aspects and significant aspect procedures****	< **Aspect Identification and potential effects forms**** < **Significance determination forms****	< **Inputs/outputs**** < **Aspects & impacts**** < **Process flow diagrams**** < **Aspect ranking**** < **Significance determination****

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EMS Element	Source	Guidance	Tools	Forms	Examples of Completed Forms/Tools or Case Studies
	SME Guide	< **Introduction*** < **Hints*** < **Getting started***	< **Aspect impact questions*** < **Things to consider*** < **Aspects worksheet*** < **Sample procedure*** < **Data sources for evaluating aspects*** < **Scoring guide for aspects evaluation***	**Aspects identification form***	< **Link between aspects and impacts*** < **Sample process flow chart***
	CEMP	< Environmental liabilities and risks to be defined under System Integration < Identification of aspects and adverse impacts under Environmental Stewardship and Sustainable Development			
	EMR	Addressed in questionnaire			
	Municipalities	Mentioned and recommended concept in Phase II: Significant Aspects and Objectives and Targets		Appendix C: Significant Environmental Aspect Assessment Matrix	Examples of significance criteria participants used
	CEC Guidance	Aspects may be identified in recommended baseline audit			
Legal and Other Requirements	Integrated EMS	**Part of aspect identification, significance determination, and objectives and targets**	< Applicable regulations worksheet < Regulatory implications of alternatives worksheet (see Objectives and Targets) < **Sample procedure**	**Applicable legal requirements form**	**Case study**
	SME Guide	< **Introduction** < **Getting started**	< **Legal and other requirements worksheet** < Resources for tracking legal requirements < Sample procedure		< **Examples of legal and other requirements tracking form** < **Commonly applicable Federal environmental laws**

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EMS PATHFINDER RESOURCE CHECKLIST (Continued)

EMS Element	Source	Guidance	Tools	Forms	Examples of Completed Forms/Tools or Case Studies
	CEMP	Requirement to: < Track regulatory issues < Provide guidance for operations to maintain compliance < Inform and coordinate with regulatory authorities as necessary			
	EMR	Addressed in questionnaire		**Media Program Review worksheet with applicable regulations**	
	Municipalities	Mentioned and recommended concept in Phase I: Developing Project Infrastructure			
	CEC Guidance	< Identify and communicate environmental requirements < Identify changes in requirements			

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EMS Element	Source	Guidance	Tools	Forms	Examples of Completed Forms/Tools or Case Studies
Objectives and Targets	Integrated EMS	< **Selecting environmental projects**** < **Evaluating alternatives**** < **Identifying potential improvements**** < **Interpreting results of alternatives analysis****	< **Sample Objectives Procedure**** < **Sample alternatives evaluation procedure**** < **Comparing alternatives worksheets for:** ¢ **Potential alternatives associated with significant aspects**** ¢ **Evaluating H,S&E potential effects**** ¢ **Exposure to chemicals and materials**** ¢ **Community issues**** ¢ **Natural resources use**** ¢ **Criteria to determine environmental impact**** ¢ **Performance**** ¢ **Regulatory implications**** ¢ **Annual operating costs**** ¢ **Potential Annual revenue effects**** ¢ **Initial investment costs**** ¢ **Summarizing costs**** ¢ **Summary evaluation****	**Sample objectives form****	**Examples of completed worksheets listed under Tools****
	SME Guide	< **Introduction*** < **ISO 14001 requirements*** < **Hints*** < **Factors to consider***	< **Process tool for setting objectives*** < **Sample procedure*** < **Objectives and targets* worksheet***		**Objective and target examples***

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EMS Element	Source	Guidance	Tools	Forms	Examples of Completed Forms/Tools or Case Studies
	CEMP	< Addressed as steps to developing a pollution prevention/resources conservation program < Requirement to identify appropriate organizational performance goals < **Description of P2 tools, e.g. life cycle analysis and total cost accounting***			
	EMR	Addressed in questionnaire			
	Municipalities	Mentioned and recommended concept in Phase II: Significant Aspects and Objectives and Targets			**Examples of objectives and targets can be found in individual case studies in Appendix B**
	CEC Guidance	Guidance on setting and reviewing objectives			
Environmental Management Program(s) (EMP)	Integrated EMS	< **Guidance on elements of EMPs** < **Outline for preparing EMPs** < **Review of new products, processes, and activities**	< **Sample procedure on review of new purchases, projects, and products**	< **Sample EMP form** < **Forms provided for review of new products, processes, and activities**	< **EMP examples**
	SME Guide	< **Introduction** < **Hints**	**EMP worksheet**	**EMP form**	
	CEMP	Addressed as integral part of measurement and improvement			
	EMR	Addressed in questionnaire			
	Municipalities	< Mentioned and recommended concept in Phase III: Environmental Management Programs < Guidance for developing EMPs	Overview matrix, which includes EMPs		

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EMS Element	Source	Guidance	Tools	Forms	Examples of Completed Forms/Tools or Case Studies
	CEC Guidance				
Structure and Responsibility	Integrated EMS	**Guidance on roles, responsibilities, and authorities**	< **Development Schedule and Resource Worksheet includes identifying participants** < **Sample responsibilities form**	< **EMS Responsibilities form**	
	SME Guide	< Introduction < Getting started < Hints	< **Responsibility matrix** < **Structure and responsibilities worksheet**		**Example of completed responsibility matrix**
	CEMP	**Guidance on addressing structure and responsibility issues**			
	EMR	Addressed in questionnaire			
	Municipalities	< Mentioned and recommended concept in Phase I: Developing Project Infrastructure < Structural guidelines from experiences in the pilot program			**Example of Linking EMP's to policy commitments**
	CEC Guidance	Human and financial resource needs			
Training, Awareness, and Competence	Integrated EMS	**Guidance on creating training plans, including action steps**	< **Staff function versus EMS role table** < **Structure and responsibility worksheet** < **Sample procedure**	**Training plan form**	**Example of how to complete form**
	SME Guide	< Introduction < Getting started < Hints	< Key steps for training program development < When training might be needed < **Training, awareness, competence worksheet**	**Training log**	Training success stories
	CEMP	Guidance on development of a training program			
	EMR	Addressed in questionnaire		Part of Media Program Review worksheet	

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EMS Element	Source	Guidance	Tools	Forms	Examples of Completed Forms/Tools or Case Studies
	Municipalities	Explanation of awareness and task-specific training			**Training and awareness examples**
	CEC Guidance	**Guidance on establishing procedure**			
Communication	Integrated EMS	**Guidance on roles and identification of stakeholders**	< **Worksheet on working with stakeholders** < **Sample external communications procedure** < **Stakeholder and environmental issue tool**	< **Sample stakeholder communication record**	**Working with stakeholders case study**
	SME Guide	< Introduction < Getting started < Hints	< Lists of internal and external communication methods < Sample internal and external communications procedures < Communications worksheet		Communications success stories
	CEMP	Guidance on internal and external communication			
	EMR	Addressed in questionnaire			
	Municipalities	Mentioned and recommended concept in Phase I: Developing Project Infrastructure			
	CEC Guidance	**Internal and external communication addressed under Environmental Requirements; Structure, Responsibility, and Resources; and Objectives and Targets**			
EMS Documentation	Integrated EMS	**Outline of what to include**	< **Worksheet for developing documentation** < **Sample EMS manual**		

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EMS Element	Source	Guidance	Tools	Forms	Examples of Completed Forms/Tools or Case Studies
	SME Guide	< Introduction < Hints	What to consider as EMS documentation **EMS documentation worksheet**		< Sample EMS manual outline < **Sample document index**
	CEMP	Guidance on developing clear organizational documentation	Self-Assessment Matrix: Information Management, Communication, and Documentation		
	EMR	Addressed in questionnaire			
	Municipalities				Lessons learned on EMS Documentation
	CEC Guidance				
Document Control	Integrated EMS	**Step-by-step guidance**	**Sample document control procedure**	**Document control form**	
	SME Guide	< Introduction < Getting started < Hints	< Sample document control procedure < **Document control worksheet**		
	CEMP	Guidance on developing a document control procedure			
	EMR	Addressed in questionnaire			
	Municipalities				
	CEC Guidance	Procedures for documentation related to objectives and targets and EMS operation			
Operational Control	Integrated EMS	**Guidance in writing operational controls**	< **Worksheet for developing operational controls, assigning responsibilities, including in training** < **Sample operational control procedure**	**Sample operational control procedures form**	**Examples of what operations might need controls, and case studies of actual controls**
	SME Guide	< **Introduction** < **Getting started** < **Hints**	< **Worksheet for determining what controls are needed** < **Operational controls worksheet**		**Example activities that might need controls**

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EMS Element	Source	Guidance	Tools	Forms	Examples of Completed Forms/Tools or Case Studies
	CEMP	Guidance on procedures for compliance assurance and performance improvement			
	EMR	Addressed in questionnaire			
	Municipalities	Stronger operational control tied to significant aspect analysis			
	CEC Guidance	Planning and management of operations and activities tied to objectives and targets			
Emergency Preparedness and Response	Integrated EMS	**Guidance on including environmental concerns in emergency preparedness plans**	< **Worksheet for including environmental concerns into emergency preparedness** < **Sample procedure**		
	SME Guide	< Introduction < Getting started < Hints	< List of useful information sources < EP&R checklist < EP&R worksheet		
	CEMP	Guidance on development of an emergency preparedness program	Self-Assessment Matrix: Emergency Preparedness		
	EMR	Addressed in questionnaire			
	Municipalities	Guidance on evaluating emergency response programs			
	CEC Guidance	**Procedures for mitigating impacts of emergency situations and testing of emergency procedures**			
Monitoring and Measurement	Integrated EMS	**Guidance on environmental performance and compliance monitoring**	< **Program measurement criteria worksheet** < **Procedure for monitoring compliance**	< **Compliance tracking log** < **Calibration log** < **P2 tracking log** < **Performance measurement indicators**	

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	SME Guide	< **Introduction** < **Getting started** < **Hints**	< **Monitoring and measurement worksheet**	Form could be derived from operations, aspects, controls, monitoring example	< **Examples of EMS performance indicators** < **Significant aspects linked to monitoring, measurement, calibration example (in implementation step)** < **Operations, aspects, controls, monitoring examples**
	CEMP	< Guidance on developing performance evaluations < How to choose performance indicators < Steps to address performance measurement < Benchmarking guidance	Self-Assessment Matrix: Evaluating Performance - Gather/Analyze Data; Institute Benchmarking		
	EMR	Addressed in questionnaire			
	Municipalities	Mentioned and recommended concept in Phase IV: Monitoring and Measuring and Management Review			Examples of measurable indicators
	CEC Guidance	*Guidance for monitoring using baseline audits*			
Nonconformance and Corrective and Preventative Action	Integrated EMS	**Addressed in discussion of operational controls, compliance tracking, and internal assessment**	< **Sample procedure** < **Root cause diagram**	< **Corrective action form** < **Corrective action notice form**	
	SME Guide	< Introduction < Hints	< Checklist of root causes < Sample procedure < **Corrective & preventive action worksheet**	< Corrective action notice < **Corrective action tracking log**	

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EMS Element	Source	Guidance	Tools	Forms	Examples of Completed Forms/Tools or Case Studies
	CEMP	Guidance on corrective and preventive actions associated with compliance and performance improvement			
	EMR	< Addressed in questionnaire < **Explanation of conformance vs. compliance**			
	Municipalities	Mentioned and recommended concept in Phase IV: Monitoring and Measuring and Management Review			
	CEC Guidance	**Establishment and maintenance of procedures for corrective and preventative actions**			
Records	Integrated EMS	Provides guidance throughout document	Forms and worksheets for other elements		
	SME Guide	< **Introduction** < **Hints**	< **List of records you might maintain** < **Records management worksheet**	**Forms can be derived from records management worksheet**	**Sample records organizer**
	CEMP				
	EMR	Appendix C: Process steps for a sample EMR	**Supporting Documentation Checklist**	**Part of Media Program Review worksheet**	
	Municipalities				
	CEC Guidance	Maintaining records in accordance with relevant laws and for evaluating performance			
EMS Auditing	Integrated EMS	Guidance on setting up and documenting internal assessments	< **Internal assessment checklist** < **Sample procedure**	**Internal assessment record**	

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EMS Element	Source	Guidance	Tools	Forms	Examples of Completed Forms/Tools or Case Studies
	SME Guide	< **Introduction** < **Getting started** < **Hints**	< **EMS auditing worksheet** < **Sample procedure**	< **Audit plan** < **Communications to audit team** < **Audit summary form** < **audit findings form**	
	CEMP	Guidance on systems auditing	Self-assessment matrix		
	EMR	Addressed in questionnaire	**Checklist provides content for EMS auditing**		
	Municipalities	Mentioned and recommended concept in Phase IV: Monitoring and Measuring and Management Review			< Examples of different procedures for conducting EMS Audits < Lessons learned
	CEC Guidance	Direction for periodic, documented auditing for conformance and improvement			
Management Review	Integrated EMS	**Guidance on why to perform management review**	< **Checklist of what to review** < **Sample procedure**	**Management review record**	
	SME Guide	< Introduction < Hints	< Management review questions < List of information sources to consider < **Management review worksheet** < Sample procedure		Example success stories
	CEMP	**Guidance on management review**			
	EMR	< Addressed in questionnaire < Scope of an Environmental Management Review			
	Municipalities	< Guidance to address continuous improvement < Mentioned and recommended concept in Phase IV: Monitoring and Measuring and Management Review			

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	CEC Guidance	< **Direction for integrating EMS elements into decision-making and planning** < Management review of audits < Focus on overall improvement			

SOURCES:

1. Integrated EMS: Integrated Environmental Management Systems Guide, US EPA, Office of Pollution Prevention and Toxics, EPA 744-R-00-011, October 2000 and Integrated Environmental Management Systems, A Company Manual Template for Small Business, US EPA, Office of Pollution Prevention and Toxics, EPA 744-R-00-012, December 2000.

2. SME Guide: Environmental Management Systems: An Implementation Guide for Small and Medium-Sized Organizations, Second Edition, November 2000.

3. CEMP: Implementation Guide For The Code of Environmental Management Principles for Federal Agencies (CEMP), US EPA, Office of Enforcement and Compliance Assurance, EPA 315-B-97-001, March 1997.

4. EMR: Environmental Management Review (EMR) National Report: Lessons Learned in Conducting EMRs at Federal Facilities, US EPA, Office of Enforcement and Compliance Assurance, EPA 315-R-99-003, November 1999. (With Supplementary EMR Checklists)

5. Municipalities: The US EPA Environmental Management System Pilot Program for Local Government Entities, Prepared by Global Environment & Technology Foundation, Assistance Agreement No. X 825557-01-0, January 28, 2000.

6. CEC Guidance: Improving Environmental Performance and Compliance, 10 Elements of Effective Environmental Management Systems, Guidance Document, Enforcement Cooperation Program of the Commission for Environmental Cooperation, June 2000.

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